EXHIBIT R-2, FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N**
PROGRAM ELEMENT TITLE: Standards Development

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Complete	Total Program	Total Program
S1857 Calibration Standards	1,777	4,552	1,572	1,738	1,754	1,776	1,831	CONT.	CONT.
E2310 Flight Polynomials	251	286	347	355	355	364	374	CONT.	CONT.
E2311 Stores Planning and Weaponeering Module	7,254	7,391	8,589	7,743	751	764	781	CONT.	CONT.
E2312 Common Helicopters	428	1,434	1,973	2,745	1,210	1,254	1,309	CONT.	CONT.
W0572 Joint Services/Navy Standard Avionics Components and Subsystems	40,172	63,235*	83,333*	51,153*	24,985*	17,502*	11,656*	CONT.	CONT.
TOTAL	**49,882**	**76,898**	**95,814**	**63,734**	**29,055**	**21,660**	**15,951**	**CONT.**	**CONT.**
Quantity of RDT&E Articles	49	122	69	46	0	0	0	0	286

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware in all major measurement technology areas. It funds Navy lead-service responsibilities in the DOD metrology RDT&E program.

(U) Project E2310, Flight Polynomials: The Tactical Automated Mission Planning System (TAMPS) is the CNO designated common automated mission planning system for the Navy. One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, performance polynomials (drop-in polynomials) reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The following type/model/series aircraft are supported by this PE: F/A-18 (400), F/A-18 (402), C-2R, E-2C (Block II), F-14 B/D, AH-1W, UH-1N, CH-46E, H-60F/H, S-3B, EA-6B, AV-8B (406), AV-8 (408), T-45, and KC-130 F/R/T. The developed drop-in performance polynomials will initially be implemented in Naval Portable Flight Planning Software (N-PFPS).

*Project Unit W0845 (PE 0604574N) is combined with PE 0604215N, Project Unit W0572 beginning FY00. With this combination, Flight Avionics Displays (FAD) becomes Advanced Mission Computer and Displays (AMC&D).

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N**
PROGRAM ELEMENT TITLE: Standards Development

(U) Project E2311, Stores Planning and Weaponeering Module: The Navy Stores Planning and Weaponeering (NSPW) application is an incrementally developed software product that will provide a certified unit level weaponeering capability for Navy aircraft in the Joint Mission Planning Segment (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile); and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW as a stand alone product.

(U) Project E2312, Common Helicopters: The Tactical Automated Mission Planning System (TAMPS) is the CNO designated common automated mission planning system for the Navy. Automated mission planning systems to date have been developed targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E,
H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and Fleet released common helicopter functionality will migrate to the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.

(U) Project W0572, Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, design, development, test, evaluation and qualification of standard avionics for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications, navigation, flight avionics, safety systems, and flight mission information systems for both forward fit and retrofit aircraft. These efforts continue to maintain federated systems while encouraging transition of procurements to support a modular system for enhanced performance and affordability. Consideration is given up front to reduce acquisition costs through larger procurement quantities that satisfy multi-aircraft customer requirements and that reduce life cycle costs in the areas of reliability, maintainability, and training. Several examples of past successful tasks under this project include the Standard Central Air Data Computer, Solid State Barometric Altimeter, and Downed Aircraft Location System, jointly developed with the Air Force and Army and currently installed on numerous Navy, Air Force and Army aircraft. This project also funds Navy chairmanship and participation in the Joint Services Review Committee (JSRC) for Avionics Standardization. The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering &
Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, Advanced Mission Computer & Displays (AMC&D) EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fiber Channel Switches, and technology roll kits.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING & MANUFACTURING DEVELOPMENT because they encompass engineering and manufacturing development of new end-items prior to production approval decision.

EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

Date: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N**
PROGRAM ELEMENT TITLE: Standards Development

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
S1857 Calibration Standards	1,777	4,552	1,572	1,738	1,754	1,776	1,831	CONT	CONT
TOTAL	1,777	4,552	1,572	1,738	1,754	1,776	1,831	CONT	CONT

Quantity of RDT&E Articles – Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides the engineering development of measurement reference/calibration standards (hardware) required to ensure measurement accuracy in support/maintenance of new advance technology weapon systems and associated support equipment. There individual tasks have been assigned to the Navy as lead-service responsibilities as part of a Joint Service/DOD program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
   - (U) ($ 198) Completed the development of 1 calibration standard (hardware) in support of system electromagnetic vulnerability measurement.
   - (U) ($ 252) Completed the development (to 100% completion) of 1 calibration standard (hardware) in support of laser tracking system.
   - (U) ($1,327) Began development (to 50% completion) of 6 calibration standards (hardware) in support of target designators lasers, underwater acoustic systems, Infrared (1.52u) systems, optical systems, radar measurements, and multi-function electrical test equipment.

2. FY 2000 PLAN:
   - (U) ($2,775) Begin development (to 50% completion) of 10 calibration standards (hardware) in support of shipboard gage calibration, electronic maintenance, composite material testing, optical systems, laser power measurements, infrared imaging system (8 -12 um), infrared target designators (3 – 5 um), AN/UPM-155 pulse characterization, automated calibration procedures and Radar Cross Section measurements. Begin development (to 50% completion) of 4 modeling and simulation projects to develop tools for reducing the cost of maintenance and optimizing test decisions.
   - (U) ($1,060) Complete the development of 4 calibration standards (hardware in support of laser tracking systems, target designators, electromagnetic vulnerability measurements, and radar power measurements.
   - (U) ($717) Continue development (to 66% completion) of 4 calibration standards (hardware) in support of underwater acoustic systems, Infrared (1.52u) systems, optical systems, and multi-function electrical test equipment.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N**
PROGRAM ELEMENT TITLE: Standards Development

3. FY 2001 PLAN:
   - (U) ($841) Complete development of 14 calibration standards in support of underwater acoustic systems, Infrared (1.52u) systems, optical systems and multifunction electrical test systems, shipboard gage calibration, electronic maintenance, composite material testing, optical systems, laser power measurements, infrared imaging system (8 – 12 um), infrared target designators (3 – 5 um), AN/UPM-155 pulse characterization, automated calibration procedures and Radar Cross Section measurements. Complete development of 4 modeling and simulation projects to develop tools for reducing the cost of maintenance and optimizing test decisions.
   - (U) ($731) Begin development (to 33% completion) of 3 calibration standards (hardware) in support of shipboard pressure gauges, aircraft and shipboard electronic system maintenance, and fiber optic communication systems.

(U) B. PROGRAM CHANGE SUMMARY	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	1,790	1,578	1,564
(U) Appropriated Value:	1,799	1,578	
(U) Adjustments from President's Budget:			
a. Minor Pricing Adjustments	-13	2,974	8
(U) FY 2001 DON Budget Submit:	1,777	4,552	1,572

CHANGE SUMMARY EXPLANATION:

(U) Funding:
FY 2000 increase of $2,974 thousand due to Congressional Plus-Up of $3,000 thousand for Joint Service Metrology.
FY 2001 increase of $8 thousand is due to minor pricing adjustments.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

EXHIBIT R-2a, FY 2001 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604215N
PROGRAM ELEMENT TITLE: Standards Development

Related RDT&E

(U) P.E. 0604215N Joint Services/Navy Standard Avionics Components and Subsystems

(U) D. ACQUISITION STRATEGY: Not Applicable

(U) E. SCHEDULE PROFILE: Not Applicable

EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS **DATE: February 2000**

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: S1857**
PROJECT TITLE: Calibration Standards

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC NWAS	1,296	1,197	10/98	3,709	10/99	993	10/00	CONT.	CONT.	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			**1,296**	**1,197**		**3,709**		**993**		**CONT.**	**CONT.**	

Remarks:

Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			**0**	**0**		**0**		**0**		**0**	**0**	

Remarks:

EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS **DATE: February 200(**

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: S1857**
PROJECT TITLE: Calibration Standards

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal Test & Evaluation			**0**	**0**		**0**		**0**		**0**	**0**	
Remarks:												
Contractor Engineering Support												
Government Engineering Support	WR	NSWC NWAS	235	223	10/98	500	10/99	223	10/00	CONT.	CONT.	
Program Management support	WR	NSWC NWAS	329	337	10/98	313	10/99	336	10/00	CONT.	CONT.	
Travel		NSWC NWAS	26	20	10/98	30	10/99	20	10/00	CONT.	CONT.	
Labor (Research Personnel)												
Overhead												
Subtotal Management			**590**	**580**		**843**		**579**		**CONT.**	**CONT.**	
Remarks:												
Total Cost			**1,886**	**1,777**		**4,552**		**1,572**		**CONT.**	**CONT.**	

DATE: February 2000

BUDGET ACTIVITY: 5 | **PROGRAM ELEMENT: 0604215N** | **PROGRAM ELEMENT TITLE: Standards Development** | **PROJECT NUMBER: E2310** | **PROJECT TITLE: FLIGHT POLYNOMIALS**

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
E2310 Flight Polynomials *	**251**	**286**	**347**	**355**	**355**	**364**	**374**	**Cont.**	**Cont.**

Quantity of RDT&E Articles Not applicable

* Previously funded under W2310.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, flight performance polynomials reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The developed flight performance polynomials will initially be implemented in Naval Portable Flight Planning Software (N-PFPS).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
   - (U) ($251) Continued the development, certification, and release of flight performance polynomials. The following flight performance polynomials are in development: F-14B/D and H-53E. Polynomials were completed for AH-1W, CH-46E and E-2C+.

2. (U) FY 2000 PLAN:
   - (U) ($286) Continue the development, certification, and release of flight performance polynomials. The following flight performance polynomials are scheduled: KC-130F/R/T and P-3C.

DATE: February 2000

BUDGET ACTIVITY: 5 | **PROGRAM ELEMENT: 0604215N** | **PROJECT NUMBER: E2310**
PROGRAM ELEMENT TITLE: Standards Development | **PROJECT TITLE: FLIGHT POLYNOMIALS**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS: (continued)

3. (U) FY 2001 PLAN:
   - (U) ($347) Continue the development, certification, and release of flight performance polynomials. The following polynomials are planned; SH-60B and F14-A.

(U) B. PROGRAM CHANGE SUMMARY

	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	292	287	0
(U) Appropriated Value:	293	287	
(U) Adjustments from President's Budget:	-41	-1	347
(U) FY 2001 President's Budget Submit:	251	286	347

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 decrease of $40 thousand is due to a reprioritization of requirements with the Navy and $1 thousand decrease for inflation savings. FY 2000 decrease reflects a $1 thousand reduction for an Across-the-Board Congressional Recision. FY 2001 increase reflects a net increase of $347 thousand for additional flight polynomials.

(U) Schedule: Added functionality for Kosovo maps delayed 3.1 release to 2QFY00 and 3.2 release from 2Q FY00 to 2Q FY01. Release 3.3 has been removed and folded into JMPS.

(U) Technical: Not Applicable

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2310**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: FLIGHT POLYNOMIALS**

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
OPN	23,240	20,653	11,980	17,436	10,738	11,604	12,366	CONT.

Related RDT&E

(U) P.E. 0604231N Mission Planning (E2213)

(U) D. ACQUISITION STRATEGY: This is a co-operative development between the USN and USAF.

(U) E. SCHEDULE PROFILE

	FY 1999	FY 2000	FY 2001	To Complete
(U) Program Milestones		2Q/00 3.1 N-PFPS	2Q/01 3.2 N-PFPS	4Q/02 JMPS IOC
(U) Engineering Milestones				
(U) T&E Milestones			2Q/02JMPS OPEVAL	
(U) Contract Milestones				

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2311**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Stores Planning and Weaponeering Module**

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
E2311 Stores Planning Weaponeering Module *	**7,254**	**7,391**	**8,589**	**7,743**	**751**	**764**	**781**	**CONT.**	**CONT.**
TOTAL	**7,254**	**7,391**	**8,589**	**7,743**	**751**	**764**	**781**	**CONT.**	**CONT.**

Quantity of RDT&E Articles- Not applicable

* Previously funded under W2311

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Navy Stores Planning and Weaponeering (NSPW) application, previously known as Stores Planning and Weaponeering Module (SPWM), is an incrementally developed software product that will provide a certified unit level weaponeering capability for Navy and Marine Corp aircraft in the Joint Mission Planning System (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile), and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise the NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW as a standalone product.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2311**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Stores Planning and Weaponeering Module**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
   - (U) ($7,254) Continued the NSPW Elaboration Phase begun in FY98 by completing scenario walkthroughs, updating risk assessment, and participated in JMPS technical interchanges. Completed the system's domain model. Began NSPW design: held Fleet Review and assessed Fleet input, conducted architectural planning by allocating layers and partitions of the NSPW architecture, created an Architectural Prototype, and identified any risks in the key architectural constructs. Performed Release Planning by prioritizing scenarios, grouping scenarios into iterations, and creating a task plan; prepared and presented integration reviews. Completed ATACS version 2.0 Certification Testing and held Technical Information Review Board (TIRB) and Release Board. Duplicated and distributed CDs and began development of ATACS version 2.1.

2. (U) FY 2000 PLAN:
   - (U) ($7,391) To conclude NSPW Elaboration Phase by establishing an articulation baseline and conducting an elaboration status review. Present NSPW constructive readiness review for FA18A/B/C/D stand-alone product. Begin NSPW Construction Phase. Two constructive elaborations are planned in FY00 with a hardware review. Develop and release ATACS version 2.1
   - (U) Analysis and design of loading capability for JMPS Version 1 aircraft (CH-46, CH53D, CH53E, HH-60H, KC-130, T-45, UH-1, SH-60R, and AH-1) will be initiated.

3. (U) FY 2001 PLAN:
   - (U) ($8,589) Continue NSPW Construction Phase including FQT and certification testing on F/A-18A/B/C/D stand alone product. Initiate analysis and design for load and load validation for EA-6B aircraft. Develop and release ATACS version 2.2.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2311**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Stores Planning and Weaponeering Module**

(U) B. PROGRAM CHANGE SUMMARY

	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	7,271	7,432	7,812
(U) Appropriated Value:	7,295	7,432	
(U) Adjustments from President's Budget:	-17	-41	777
(U) FY 2001 President's Budget Submit:	7,254	7,391	8,589

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 net decrease of $17 thousand reflects a decrease of $143 thousand for a SBIR assessment, a decrease of $33 thousand for inflation savings, a decrease of $1 thousand for reprioritization of requirements within the Navy, and an increase of $160 thousand for alignment of NSPW functions with aircraft combat mission planning. FY 2000 decrease reflects a $41 thousand reduction for an Across-the-Board Congressional Recision. FY 2001 net increase of $777 thousand reflects an increase of $866 thousand for EA-6B and F-18 Stores Planning efforts, an increase of $26 thousand for Navy Working Capital Fund (NWCF) rates, a reduction of $50 thousand for the Navy Strategic Sourcing Planning initiatives, an increase of $16 thousand for Military and Civilian Pay, a reduction of $59 thousand for revised economic assumptions and a reduction for $22 thousand for reprioritization of requirements within the Navy.

(U) Schedule: Change reflects a restructure of program milestones from ATACS to NSPW release milestones.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
OPN	23,240	20,653	11,980	17,436	10,738	11,604	12,366	CONT.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2311**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Stores Planning and Weaponeering Module**

Related RDT&E

(U) P.E. 0604231N Mission Planning (E2213)

(U) D. ACQUISITION STRATEGY: Navy Stores Planning and Weaponeering (NSPW) software applications are being built by a software development team composed of government and contractor entities. Engineers provide domain expertise in the areas of platform specific stores compatibility and weapons separation, load validation, drag counts, fuzing, delivery and safe escape, unguided trajectory modeling, guided weapons models, weapon effects, and aerodynamic flutter to the software development team. NSPW management and the test team for IV&V and Certification Testing are also combined teams of United State Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.

(U) E. SCHEDULE PROFILE

	FY 1999	FY 2000	FY 2001	To Complete
(U) Program Milestones				
ATACS	3Q/99 2.0 Release	2Q/00 2.1 Release	2Q/01 2.2 Release	
NSPW				2Q/02 1.0 Release
(U) Engineering Milestones				
(U) T&E Milestones				
(U) Contract Milestones	2 Q/99 DCS GSA Contract Award	2 Q/00 DCS GSA Contract Award	2 Q/01 DCS GSA Contract Award	2Q/02 DCS GSA Contract Award

EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2311**

PROJECT TITLE: Stores Planning

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total * Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	NAWCAD Pax Riv	2,891	2,356	12/98	2,242	10/99	2,521	10/00	4,767	17,923	
Software Development	GSA/FP	DCS Inc., Pax Riv	1,204	2,361	1/99	2,390	12/99	2,768	12/00	CONT	CONT	17,873
Various	Various	Various	1,064	1,355	Various	1,140	Various	1,274	Various	CONT	CONT	9,897
Subtotal Project Development			**5,159**	**6,072**		**5,772**		**6,563**		**CONT**	**CONT**	**27,770**
Remarks:												
Subtotal Support			**0**	**0**		**0**		**0**		**0**	**0**	
Developmental Test & Evaluation	Various	Various	652	719	Various	743	Various	1,274	Various	CONT	CONT	7,846
Subtotal Test & Evaluation			**652**	**719**		**743**		**1,274**		**CONT**	**CONT**	**7,846**
Remarks:												
Misc.	WX	Various	455	463		876		752		CONT	CONT	
Subtotal Management			**455**	**463**		**876**		**752**		**CONT**	**CONT**	
Remarks:												
Total Cost			**6,266**	**7,254**		**7,391**		**8,589**		**CONT**	**CONT**	

* FY98 program was executed under project W2311.

EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2312**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Common Helicopters**

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Complete	To Program	Total
E2312 Common Helicopters *	**428**	**1,434**	**1,973**	**2,745**	**1,210**	**1,254**	**1,309**	**CONT.**	**CONT.**
TOTAL	**428**	**1,434**	**1,973**	**2,745**	**1,210**	**1,254**	**1,309**	**CONT.**	**CONT.**

Quantity of RDT&E Articles Not applicable

* Previously funded under W2312

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Automated mission planning systems to date have been developed targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and fleet released common helicopter functionality will migrate to the Joint Mission Planning System (JMPS).

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2312**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Common Helicopters**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
   - (U) ($428) Develop, test, and release N-PFPS version 3.1 for common helicopter data loading. Conduct an analysis of common helicopter requirements to be implemented in subsequent N-PFPS and JMPS releases.

2. (U) FY 2000 PLAN:
   - (U) ($1,434) Commence development of common helicopter functionality as identified in the FY-99 requirement analyses. Release version 3.2 of N-PFPS.

3. (U) FY 2001 PLAN:
   - (U) ($1,973) Continue development of Common Helicopter functionality.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2312**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Common Helicopters**

(U) B. PROGRAM CHANGE SUMMARY

	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	452	1,442	1,975
(U) Appropriated Value:	453	1,442	
(U) Adjustments from President's Budget:	-24	-8	-2
(U) FY 2001 President's Budget Submit:	428	1,434	1,973

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 net decrease of $24 thousand reflects a decrease of $8 thousand for a SBIR assessment, a decrease of $9 thousand for reprioritization of requirements within the Navy and a decrease of $7 thousand for inflation savings. FY 2000 decrease reflects a $8 thousand reduction for an Across-the-Board Congressional recision. The FY 2001 net decrease of $2 thousand reflects a net decrease of $12 thousand for reprioritization of requirements within the Navy, an increase of $15 thousand for Navy Working Capital Fund rate adjustments, an increase of $6 thousand for Military and Civilian pay, and a decrease of $11 thousand for revised economic assumptions.

(U) Schedule: Added functionality for Kosovo maps delayed 3.1 release to 2Q FY00, also impacted the release of NPFS 3.2. Schedule adds milestones for JMPS functionality in FY01 and to complete.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
OPN	23,240	20,653	11,980	17,436	10,738	11,604	12,366	CONT.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2312**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Common Helicopters**

Related RDT&E

(U) P.E. 0604231N Mission Planning (E2213)

(U) D. ACQUISITION STRATEGY - NOT APPLICABLE.

(U) E. SCHEDULE PROFILE

	FY 1999	FY 2000	FY 2001	To Complete
(U) Program Milestones		2Q/00 3.1 Release	2Q/01 3.2 Release	4Q/02 JMPS IOC
(U) Engineering Milestones				
(U) T&E Milestones				2Q/02 JMPS OPEVAL
(U) Contract Milestones				

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS **DATE: February 2000**

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: E2312**
PROJECT TITLE: Common Helicopters

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Misc.	Various	Various		375	10/98	1,384	10/99	1,875	10/00	CONT	CONT	
Subtotal Project Development			**0**	**375**		**1,384**		**1,875**		**CONT**	**CONT**	
Remarks												
Subtotal Support			**0**			**0**		**0**		**0**	**0**	
Remarks												
Subtotal Test & Evaluation			**0**			**0**		**0**		**0**	**0**	
Remarks												
Misc.	Various	Various		53	10/98	50	10/99	98	10/00	CONT	CONT	
Subtotal Management			**0**	**53**		**50**		**98**		**CONT**	**CONT**	
Remarks												
Total Cost			**0**	**428**		**1,434**		**1,973**		**CONT**	**CONT**	

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROGRAM ELEMENT TITLE: Standards Development**

PROJECT NUMBER: W0572 **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
W0572 Joint Services/Navy Standard Avionics Components and Subsystems	40,172	63,235*	83,333*	51,153*	24,985*	17,502*	11,656*	CONT.	CONT.
TOTAL	**40,172**	**63,235**	**83,333**	**51,153**	**24,985**	**17,502**	**11,656**	**CONT.**	**CONT.**
Quantity of RDT&E Articles	49	122	69	46	0	0	0	0	286

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Services/Navy Standard Avionics Components and Subsystems project provides for the identification, design, development, test, evaluation and qualification of standard avionics and mandatory safety improvements for Navy use, and wherever practicable, use across all services. Standard avionics systems under development include the Ground Proximity Warning System (GPWS) for Tactical Aircraft (TACAIR) CAT II, Terrain Awareness Warning System (TAWS) in TACAIR aircraft, Low Probability of Intercept Altimeter (LPIA), Tactical Aircraft Moving Map Capability (TAMMAC), Midair Collision Avoidance System (MCAS), Communication Navigation Surveillance Air Traffic Management (CNS/ATM), Flight Avionics Displays (FAD) in FY99 and becomes Advanced Mission Computer & Displays (AMC&D) in FY00. Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fiber Channel Switches, and technology roll kits.

*Project Unit W0845 (PE 0604574N) is combined with PE 0604215N, Project Unit W0572 beginning FY00. With this combination, Flight Avionics Displays (FAD) becomes Advanced Mission Computer and Displays (AMC&D).

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) ($ 3,252) Completed King Air Risk Reduction flight testing. Commenced combined DT/OT for the LPIA program.
- (U) ($ 8,819) Completed qualification testing, continued F/A-18, AV-8B and TAMPS integration efforts, conducted operational assessment, completed combined DT/OT on the F-18 C/D, and commenced TECHEVAL on the TAMMAC program.
- (U) ($17,401) Conducted CDR and continued development and integration of FAD for F/A-18 E/F. Completed Preliminary Design Review (PDR) for FAD. Integrated AV-8B into the AMC&D program.
- (U) ($ 1,350) Continued support of the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability/connectivity communications and CNS/ATM. Supported and participated in Avionics OAG panels and HFQMB.
- (U) ($ 1,423) Safety: Commenced Flight Test and continued with deficiency correction of the GPWS CAT II DT in the F/A-18 C/D/E/F aircraft.
- (U) ($ 2,251) Safety: Began systems integration and software development of the Terrain Awareness Warning System (TAWS) with the TAMMAC Digital Map on the F/A-18 to increase the GPWS operational envelope.
- (U) ($ 465) Safety: Developed acquisition documentation. Began investigation of systems requirements and technical alternatives available for the Midair Collision Avoidance System (MCAS).
- (U) ($ 5,211) Awarded development contracts and completed PDRs for Required Navigation Performance (RNP-4), a software and hardware modification to Embedded Global Positioning System/Initial Navigation System (EGI) to increase integrity of navigation solution to levels acceptable to FAA and International Civil Aviation Organization (ICAO). Awarded hardware contract for CNS/ATM data links.

2. (U) FY 2000 PLAN:

- (U) ($ 320) Safety: Complete operational flight test and deficiency corrections of the GPWS CAT II in the F/A-18 C/D (15C) OFP aircraft.

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- (U) ($ 1,323) Complete DT/OT-11A for the LPIA program. Commence and complete TECHEVAL for the LPIA program. Commence and complete OPEVAL. Achieve Milestone III decision.

- (U) ($ 3,760) Complete TAMMAC TECHEVAL for F/A-18, AV-8B and TAMPS integration efforts and conduct OPEVAL on TAMMAC program.

- (U) ($44,776) Award development contract, conduct hardware integration, design verification testing/qualification, and reliability development testing (RDT) of baseline AMC&D (formerly FAD) for the F/A-18E/F and AV-8B programs. Begin DT-IIA1 for F/A-18 and DT-IIB1 for AV-8B. Begin development and conduct PDR of 8 x 10 display and Fiber Channel Switch phase of the program for F/A-18 E/F.

- (U) ($ 1,360) Continue to support the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability/connectivity communications and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.

- (U) ($ 2,286) Safety: Complete analysis of alternatives, award development contract, and complete PDR for MCAS.

- (U) ($ 3,500) Safety: Complete PDR/CDR of the TAWS for F/A-18 OFP 17C/18E.

- (U) ($ 1,090) Initiate transition of TAMMAC mission planning capability to the Naval Portable Flight Planning Systems (N-PFPS). Initiate and complete software PDR and CDR.

- (U) ($ 650) Conduct Mission Planning System Module Integration for Common Avionics Systems, to include the ARC-210 radio.

- (U) ($ 4,170) Commence CDRs for RNP-4, PIRs/CIRs for Mode S, award contract for Mode S to ensure required access for commercial derivative and tactical naval aircraft for CNS/ATM and initiate platform integration of the Mode S system.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

3. (U) FY 2001 PLAN:

- (U) ($67,896) Conduct OT-IIA1 for baseline AMC&D (formerly FAD) on F/A-18 E/F system to support LRIP decision. Begin DT-IIA2 for baseline system on F/A-18 E/F. Conduct CDR for 8 x 10 and Fiber Channel Switch and procure EMD assets for phased program (8 x 10 display and Fiber Channel Switch). Conduct DT-IIB2 (TECHEVAL) on AV-8B. Begin development of Multi-Purpose Color Display (MPCD) for F/A-18 C/D and AV-8B.

- (U) ($ 1,310) Continue to support and chair the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.

- (U) ($ 2,702) Safety: Complete CDR and commence DT for MCAS.

- (U) ($ 3,300) Safety: Commence DT and OT of the TAWS for F/A-18 OFP 18E.

- (U) ($ 828) Complete software coding and functional/operational testing efforts for TAMMAC/N-PFPS map planning capability. Finalize requirements for TAMMAC JMPS mission planning capability and complete PDR and CDR for the JMPS User Planning Components.

- (U) ($ 650) Continue requirements identification and conduct design reviews for integration of Mission Planning System Module Integration for Common Avionics Systems, to include ARC-210 radio.

- (U) ($ 6,647) Complete DT/OT for CNS/ATM and commence TECHEVAL for RNP-4 and Mode S for CNS/ATM and complete software development for data links.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) B. PROGRAM CHANGE SUMMARY

	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	41,006	63,586	76,991
(U) Appropriated Value:	42,147	63,586	
(U) Adjustments from Pres Budget:	-834	-351	6,342
(U) FY 2001 President's Budget Submit:	40,172	63,235	83,333

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 net decrease of $913 thousand reflects a reduction of a Small Business Innovative Research (SBIR) assessment and an increase of $79 thousand for inflation adjustments. FY 2000 decrease reflects a $351 thousand reduction for an Across-the-Board Congressional rescission. FY 2001 net increase of $6,342 thousand reflects an increase of $7,500 thousand for the Multi-Purpose Color Display (MPCD) for F/A-18 AMC&D, a net decrease of $69 thousand for Strategic Sourcing Plan savings and Navy Working Capital fund (NWCF) adjustments, a $45 thousand increase for military and civilian pay, a $568 thousand decrease for revised economic assumptions and a $566 thousand decrease for reprioritization of requirements within the Navy.

(U) Schedule: FY 1999 reflects a change in CNS/ATM EMD Contract Award from 2Q 99 to 3Q 99 due to change in acquisition strategy. FY 2000 reflects a decision in MCAS MS II for 2Q 00. TAWS F/A-18 PDR moved from 3Q 99 to 2Q 00 due to OFP schedule changes. TAWS CDR changed from 2Q 99 to 3Q 99 due to F/A-18 aircraft OFP schedule changes. AMC&D PDR scheduled for 4Q 00 for F/A-18. Preliminary Integration Review and Critical Integration Review for CNS/ATM ATM integration of "Mode S". LPIA TECHEVAL/OPEVAL changed from 4Q 99 to 1Q 00 due to delays in risk reduction flights and aircraft integration, which resulted in test delays. CNS/ATM Contract Award for Mode S changed from 1Q 00 to 2Q 00 due to change in acquisition strategy. TAMMAC OPEVAL changed from 1Q to 2Q to coincide with F/A-18 Aircraft OFP test schedule. LPIA MS III changed from 3Q to 4Q due to software anomalies found during DT/OT-IIA testing. FY 2001 reflects TAWS DT changed from 2Q 00 to 1Q 01 due to F/A-18 aircraft OFP schedule changes.

(U) Technical: Not applicable.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) C. OTHER PROGRAM FUNDING SUMMARY

Appn	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete
APN BLI 057700	99,829	81,077	71,620	90,001	87,764	109,523	101,240	CONT.
Related RDT&E								
(U) P.E. 0604574N (W0845)	4,759	0	0	0	0	0	0	
(U) P.E. 0702207N (W2454)	5,639	1,723	567	752	0	0	0	

(U) D. ACQUISITION STRATEGY: AMC&D is utilizing a Sole source to McDonnell Douglas Corp. (MDC), a wholly owned subsidiary of the Boeing Company, for prototype design using an 845 Other Transaction Agreement (OTA) and Cost Plus Contract for EMD and LRIP. MDC conducted a competition to potential suppliers and selected General Dynamics Information Systems for the AMC and Honeywell for Displays.

DATE: February 2000

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) E. SCHEDULE PROFILE

	FY 1999	FY 2000	FY 2001	TO COMPLETE
(U) Program Milestones		2Q/00 AMC&D PR 4Q/00 LPIA MS III 2Q/00 MCAS MS II	1Q/01 TAMMAC MSIII (10/00)	3Q/02 AMC&D MSIII (AV-8B) 1Q/04 AMC&D MSIII (F/A-18)
(U) Engineering Milestones	1Q/99 FAD PDR 2Q/99 FAD CDR 4Q/99 CNS/ATM PDRs	1Q/00 N-PFPS SCR 2Q/00 TAWS F/A-18 (18E) PDR 3Q/00 TAWS F/A-18 (18E) CDR 2Q/00 N-PFPS PDR 3Q/00 N-PFPS CDR 3Q/00 CNS/ATM CDRs 4Q/00 MCAS PDR 4Q/00 AMC&D PDR (F/A-18) 2Q/00 CNS/ATM Mode S PIR 3Q/00 CNS/ATM Mode S CIR	2Q/01 MCAS CDR	

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROGRAM ELEMENT TITLE: Standards Development **PROJECT TITLE: Joint Services/Navy Standard Avionics Components and Subsystems**

(U) E. SCHEDULE PROFILE Continued

	FY 1999	FY 2000	FY 2001	TO COMPLETE
(U) T&E Milestones	3Q/99-1Q/00 GPWS CAT II DT (15C OFP) 2Q/99-1Q/00 LPIA DT-IIA/OT-IIA 4Q/99-1Q/00 TAMMAC TECHEVAL (8/99-12/99)	2Q/00-3Q/00 LPIA TECHEVAL/OPEVAL 1Q/00-3Q/00 GPWS CAT II OT (15C OFP) 2Q/00-4Q/00 TAMMAC OPEVAL 3Q/00-2Q/01 AMC&D DT-IIA1/OT-IIA1 (F/A-18) 3Q/00-2Q/01 AMC&D DT-IIB1 (AV-8B)	1Q/01-3Q/01 TAWS DT (18E OFP) 2Q/01-3Q/01 CNS/ATM DT/OT 4Q/01-1Q/02 CNS/ATM TECHEVAL 4Q/01-2Q/02 TAWS OT (18E OFP) 4Q/01 MCAS DT/OT 2Q/01 JMPS SCR 2Q/01-3Q/01 N-PFPS OTRR 3Q/01-4Q/01 JMPS PDR/CDR 4Q/01-2Q/02 AMC&D DT-IIA2 (F/A-18) 2Q/01 AMC&D DTIIB2 (AV-8B)	
(U) Contract Milestones	3Q/99 CNS/ATM EMD Contract Awards VDL Mode 3	2Q/00 AMC&D EMD Contract Award 2Q/00 MCAS Contract Award 2Q/00 CNS/ATM Contract Award Mode S		

EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS **DATE: February 2000**

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROJECT TITLE: Standard Avionics

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AMC&D/EMD Prime Contract	SS/ 845 OTA	Boeing, St. Louis, MO	6,418	17,152	11/98	13,724	11/99			0	39,444	TBD
AMC&D/EMD Prime Contract	SS/ CP EMD	Boeing, St. Louis, MO				27,318	1/00	58,837	12/00	Cont.	Cont.	TBD
LPIA/EMD Prime Contract	C/Cost Share	Marconi Aerospace Systems, Inc Wayne, NJ	5,281	1,184	12/98	60	12/99			0	6,525	N/A
TAMMAC/EMD Prime Contract	SS/ CPIF EMD	Boeing, St. Louis, MO	17,701	5,812	11/98	1,081	11/99			0	24,659	23,062
CNS/ATM/EMD Prime Contract	SS/ BOA	Litton Woodland Hills, CA		858	5/99					Cont.	Cont.	TBD
CNS/ATM/EMD Prime Contract	SS/CIPF	Rockwell		2,214	6/99			852	3/01	Cont.	Cont.	TBD
CNS/ATM/EMD Prime Contract	TBD	TBD				1,300	3/00	2,400	11/00			
MCAS/EMD Prime Contract	TBD	TBD				1,538	2/00	2,000	3/01	Cont.	Cont.	TBD
Award Fees	Misc	Misc								0	0	
Systems Engineering	WX	NAWC-AD PAX		1,399	1/99					0	0	
Systems Engineering (TAMPS)	WX	NAWC-AD PAX				1,513	11/99			Cont.	Cont.	
Misc	Misc	Misc	42,385	6,057		8,906		12,413		Cont.	Cont.	
Subtotal Product Development			**71,785**	**34,676**		**55,440**		**76,502**		**Cont.**	**Cont.**	

Remarks: *P.E. 0604574N, Project Unit W0845 is being combined with this project unit beginning FY00 and out. Target Value of Boeing 845 Contract includes funds from both W0845 and W0572. GEC Cost Share contract does not have a Target Value. This contract has been changed from a CPIF to a Cost Share with a 25/75 ratio and a total liability to the government of $6,200K . The additional $325K is budgeted for anticipated mods to be exercised for additional tasking through GEC for OT support. Boeing Sole Source EMD contract reflects a delta in Total Cost and current Target Value in Concert with Management EAC. EAC includes planned contract modifications, cost overruns, and risk provisions.

Misc	Misc	Misc	12,849	1,543		3,223		3,574		Cont.	Cont.	
Subtotal Support			**12,849**	**1,543**		**3,223**		**3,574**		**Cont.**	**Cont.**	

Remarks

Note: PE 0604574N, Project unit W0845 is combined with P.E. 0604215N, project unit W0572 beginning FY00. With this combination, Flight Avionics Displays (FAD) becomes Advanced Mission Computer and Displays (AMC&D).

EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS **DATE: February 2000**

BUDGET ACTIVITY: 5 **PROGRAM ELEMENT: 0604215N** **PROJECT NUMBER: W0572**
PROJECT TITLE: Standard Avionics

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems T&E/OT&E	WX	NAWC-AD PAX	0	1,533	10/99	200	10/00			Cont.	Cont.	
Misc	Misc	Misc	13,519	2,420		4,372		3,257		Cont.	Cont.	
Subtotal Test & Ev			**13,519**	**3,953**		**4,572**		**3,257**		**Cont.**	**Cont.**	
Remarks												
Misc	Misc	Misc	0	0		0		0		Cont.	Cont.	
Subtotal Management			**0**	**0**		**0**		**0**		**Cont.**	**Cont.**	
Remarks												
Total Cost			**98,153**	**40,172**		**63,235**		**83,333**		**Cont.**	**Cont.**	

Note: PE 0604574N, Project Unit W0845 is combined with P.E. 0604215N, Project Unit W0572 beginning FY00. With this combination, Flight Avionics Displays (FAD) becomes Advanced Mission Computer and Displays (AMC&D).